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The Mineral Industry of Pennsylvania

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By

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U. S. Bureau of Mines

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COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF INTERNAL AFFAIRS
GENEVIEVE BLATT, *Secretary*

TOPOGRAPHIC AND GEOLOGIC SURVEY
CARLYLE GRAY, *State Geologist*

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The Mineral Industry of Pennsylvania

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By Robert D. Thomson [1]

PENNSYLVANIA mineral production totaled $926 million in 1954, a 17-percent decrease in value compared with 1953. The State continued to be an important source of mineral commodities in the United States, producing a wide variety of minerals. In 1954, 75 percent of the value of the State mineral output was attributable to

TABLE 1.—Mineral production in Pennsylvania, 1953–54 [1]

Mineral	1953		1954	
	Short tons (unless otherwise stated)	Value	Short tons (unless otherwise stated)	Value
Cement—376-pound barrels	42,093,765	$114,002,846	43,068,234	$117,912,299
Clays	[2] 3,575,287	[2] 9,987,928	3,524,398	10,243,485
Coal:				
Anthracite	30,949,152	299,139,687	29,083,477	247,870,023
Bituminous	93,330,871	516,490,411	72,010,101	378,658,531
Cobalt (content of ore)—pounds	564,450	[3]	517,124	[3]
Copper (recoverable content of ores, etc.)	3,027	1,737,498	[3]	[3]
Gold (recoverable content of ores, etc.) troy ounces	1,134	39,690	1,317	46,095
Iron ore (usable)—long tons, gross weight	1,020,826	[3]	708,109	[3]
Lime (open-maket)	1,335,300	16,010,114	1,081,583	13,206,310
Natural gas—million cubic feet	105,558	30,717,000	145,934	43,634,000
Natural-gas liquids:				
Natural gasoline—thousand gallons	[3]	[3]	4,830	320,000
LP-gases—do	1,008	90,000	1,008	89,000
Peat	8,232	47,516	15,621	141,352
Petroleum (crude)—thousand 42-gallon barrels	10,649	45,680,000	[4] 9,107	[4] 31,150,000
Sand and gravel	14,715,383	20,692,391	14,218,444	20,595,990
Sericite schist	2,463	[5] 4,926	1,898	8,541
Silver (recoverable content of ores, etc.) troy ounces	6,972	6,310	8,415	7,616
Slate	202,386	4,419,612	194,205	4,419,439
Stone	[6] 26,192,607	[6] 48,094,029	40,521,756	61,193,419
Undistributed: Graphite (crystalline, 1953), mica, pyrites, ground sand and sandstone (1953), stone (dimension basalt, 1953), recovered elemental sulfur, tripoli, and minerals whose value must be concealed for particular years (indicated in appropriate column by footnote reference 3). Excludes value of clays used for cement in 1953		14,461,911		12,548,574
Total Pennsylvania		[2] 1,121,622,000		[7] 925,545,000

[1] Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
[2] Revised figure.
[3] Included with "Undistributed" to avoid disclosure of individual company operations.
[4] Final figure. Supersedes preliminary figure given in commodity chapter.
[5] Estimate.
[6] Excludes limestone for cement and lime, and other stone, value for which is included with "Undistributed."
[7] The total has been adjusted to eliminate duplication in the value of clays and stone.

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fuels, 24 percent to nonmetals, and 1 percent to metals. Coal, cement, stone, natural gas, and petroleum, in order of decreasing value, were the most important economically.

Production of one or more mineral commodities was reported in every county in 1954. The major producing counties for metals and nonmetals, in order of decreasing value, were Northampton, Lehigh, Lebanon, Lawrence, and Allegheny. Leading bituminous-coal-producing counties were Allegheny, Cambria, Fayette, Greene, and Washington. Luzerne and Schuylkill Counties were prominent producers of anthracite.

Some of the production data for 1954 were collected jointly with the Bureau of the Census (United States Department of Commerce). Production totals will be compared with the Census totals when they are available and differences adjusted or explained. Bureau of Mines 1954 data in some instances are not directly comparable with those for 1953 because of differences in coverage.

REVIEW BY MINERAL COMMODITIES

MINERAL FUELS

Coal.—Both anthracite and bituminous coal were mined in Pennsylvania in 1954. The Pennsylvania anthracite fields underlie a surface area of approximately 484 square miles and are divided into 4 fields—the Northern, Eastern Middle, Western Middle, and Southern. The Northern field, about 55 miles long, falls largely in Lackawanna and Luzerne Counties and in parts of Susquehanna and Wayne Counties.

The Eastern Middle field, which centers around Hazelton, lies principally in southern Luzerne County and parts of northern Schuylkill and west Carbon Counties. The Western Middle field lies between the Susquehanna River and the headwaters of the Little Schuylkill River in northwest Schuylkill County, south Columbia County, and east central Northumberland County. The Southern field, the largest of the four, extends over approximately 181 square miles between Jim Thorpe on the Lehigh River to Dauphin on the Susquehanna River, extending over parts of southern Carbon, the middle portion of Schuylkill, and parts of northern Dauphin and Lebanon Counties.

The bituminous-coal fields underlie most of the western part of the State from a line drawn northward from Fulton County to Tioga County, that is, the counties west of Fulton, Huntingdon, Centre, Clinton, Lycoming, and Bradford Counties.

Production in 1954 showed a 17-percent drop in total value from 1953 for anthracite and 27 percent for bituminous coal. The percentage of anthracite produced at underground operations remained at 58 percent. Production at strip mines and recovery of culm-bank coal declined slightly from the 28 and 13 percent, respectively, reported for 1953. The remaining production of anthracite came from dredging rivers in Berks, Lancaster, Lebanon, Northampton, and Snyder Counties. Luzerne County led in anthracite production with 10,368,743 tons valued at $97,219,682, followed by Schuylkill County with 8,733,691 tons valued at $69,090,017. About one-fourth of the 1954 bituminous production came from stripping operations. Wash-

ington County led in total output of bituminous coal, while the largest tonnage from strip mines came from Clearfield County.

Peat.—Output of peat in 1954 in Pennsylvania increased 90 percent in tonnage and about 200 percent in value compared with 1953. Output came from Luzerne (ranking first in production), Lawrence, Erie, and Mercer Counties.

Petroleum and Natural Gas.—Production of natural gas in Pennsylvania in 1954 increased 38 percent in volume and 42 percent in value compared with 1953, whereas production of petroleum decreased 14 percent in quantity and 32 percent in value. The average daily oil production in 1954 was 24,995 barrels, compared with 29,115 barrels in 1953, a decline of 14 percent.[2]

The drop in petroleum production was due in large measure to a change in the price structure. At the beginning of 1954 the price received in the Bradford district was cut to $3.75 per barrel, in the Middle district to $3.70, and in the Southwest district to $3.31. On May 20 the prices were reduced further to $3.26, $3.20, and $2.81, respectively. On December 1, they were raised to $3.35, $3.25, and $2.93, respectively. The lower prices resulted from a loss of foreign markets and a decline in domestic demand for the heavier lubricating-oil fractions obtained from Pennsylvania crude oil. No gas or oil discoveries of major significance were made in Pennsylvania during 1954. Major drilling activity was confined largely to the Benezette-Driftwood Oriskany-sand gas field in northcentral Pennsylvania. In all, 1,008 shallow-sand wells were completed in 1954, compared with 1,706 in 1953. Of these, 204 were gas wells, 41 were oil wells, 129 were dry holes, 5 were for gas storage, and 629 were drilled in connection with secondary-recovery oil operations. The 204 new gas wells had a total initial open-flow capacity of 15,504,000 cubic feet per day as compared with the total initial open-flow capacity of 37,222,000 cubic feet of the 220 gas wells completed in 1953. The 41 new oil wells had a total initial production of 106 barrels per day, compared with 152 barrels from the 40 oil wells completed in 1953.

One new shallow-sand gas pool of minor importance was developed in Delaware Township, Mercer County, in 1954. The greatest activity in the shallow-sand gas belt of western Pennsylvania occurred in Jefferson County, where 51 gas wells were completed at an average total depth of 2,877 feet. The greatest number of oil wells completed was in Butler County, where 18 wells had a total average depth of 1,938 feet. In all, the 374 wells completed in 1954 had an average total depth of 2,527 feet.

In addition to the production of natural gas, natural-gas liquids were produced as byproducts, as shown in table 1.

METALS

Iron Ore.—The Bethlehem Steel Co. Cornwall mines in Lebanon County were Pennsylvania's only metal-ore producers in 1954. Production consisted of iron ore containing pyrite, in association with minerals containing copper, gold, silver, and cobalt. Usable iron ore produced at Lebanon concentrator totaled 708,100 long tons, a 31-

[2] Fettke, C. R. and Lytle, W. S., Developments in Pennsylvania in 1954: Bull. Am. Assoc. Petrol. Geol., vol. 39, No. 6, June 1955, pp. 811–821.

percent decrease compared with 1953. Byproduct ore obtained by treating the copper-yielding concentrate totaled 1,317 ounces of gold valued at $46,100, 8,400 ounces of silver valued at $7,600, and a quantity of copper. Pyrite and cobalt also were obtained by treating the pyrite concentrate.

Bethlehem Steel Co. continued work on the Grace iron mine, Morgantown, Berks County, in 1954. Work on the 2 Morgantown shafts, 1 at a depth of 1,600 feet and the other 1,200 feet, began in 1951 and was expected to be completed in 2 years. However, heavy water inflows and other adverse conditions have lengthened the construction period another 2 years. Full-scale production is scheduled for 1960, and it is estimated that approximately 12,000 tons of iron ore will be produced daily when full production is reached.

Pig Iron and Ferrous Scrap.—Production of pig iron in Pennsylvania in 1954 was 14.7 million net tons, 29 percent less than in 1953 and 13 percent less than in 1952. A total of 27 million net tons of iron and manganiferous iron ore, sinter, and miscellaneous metalliferous materials was used in producing pig iron. Of the iron ore consumed, 85 percent came from domestic mines, and the remainder was imported. The metalliferous materials consumption per ton of pig iron produced in 1954 totaled 1,832 tons, a decrease compared with 1953. The annual capacity of blast furnaces as of January 1, 1955, in Pennsylvania totaled 23.6 million net tons for 78 furnaces, an increase of 2 percent above the previous year. Distribution and capacity of the blast furnaces are shown in table 3.

During 1954 pig iron and ferrous scrap consumption in Pennsylvania decreased 29 and 32 percent, respectively, compared with 1953. The consumption, by type of furnace, is shown in table 4. The annual capacity of open-hearth, bessemer, electric, and crucible furnaces in Pennsylvania, as of January 1, 1955, is given in table 5.

Zinc.—Development at the New Jersey Zinc Co. Friedensville property continued. Pumps mounted in boreholes were effectively lowering the water table in December 1954. The first housing project at Friedensville was completed in expectation that a working force of

TABLE 2.—Iron ore and other metallic materials consumed and pig iron produced, 1952–54, in net tons

	1952	1953	1954
Metalliferous materials consumed:			
Iron and manganiferous iron ores:			
Domestic	21,087,233	25,796,941	14,662,762
Foreign	719,858	833,015	2,565,932
Sinter	7,382,109	9,022,055	7,223,233
Miscellaneous	2,893,234	3,636,834	2,505,717
Total	32,082,434	39,288,845	26,957,644
Pig iron produced	16,890,004	20,718,641	14,717,549
Materials consumed per ton of pig iron:			
Ores	1.291	1.285	1.171
Sinter	.437	.435	.491
Miscellaneous	.171	.176	.170
Total	1.899	1.896	1.832

400 will be needed for the mine and services. The mine output was estimated at 2,500 tons of ore per day. The mine is opened through a vertical shaft.

TABLE 3.—Annual capacity of blast furnaces, January 1, 1955, in net tons [1]

[American Iron and Steel Institute]

District	Location	Operator	Number of stacks	Annual capacity
Pittsburgh-Youngstown	Aliquippa	Jones & Laughlin Steel Corp	5	1,800,000
	Braddock	United States Steel Corp. (central operations).	7	2,730,200
	Clairton	do	3	639,800
	Donora	American Steel & Wire Division	2	450,000
	Duquesne	United States Steel Corp. (central operations).	6	1,313,100
	Farrell	Sharon Steel Corp	2	561,000
	McKeesport	National Tube Division	4	1,280,300
	Midland	Crucible Steel Co. of America	3	895,000
	Monessen	Pittsburgh Steel Co	3	960,000
	Neville Island	Pittsburgh Coke & Chemical Co	2	654,000
	Pittsburgh	Jones & Laughlin Steel Corp	6	1,927,000
	Rankin	United States Steel Corp. (central operations).	6	2,236,800
	Sharpsville	Shenango Furnace Co	2	445,450
Eastern	Bethlehem	Bethlehem Steel Co	7	2,708,000
	Bridsboro	Colorado Fuel & Iron Corp	1	151,200
	Chester	Chester Blast Furnace, Inc	1	200,000
	Erie	Interlake Iron Corp	1	271,000
	Fairless Hills	United States Steel Corp. (central operations).	2	1,134,000
	Johnstown	Bethlehem Steel Co	7	1,708,000
	Palmerton	New Jersey Zinc Co	2	112,000
	Sheridan	Lavino & Co., E. J	1	56,000
	Steelton	Bethlehem Steel Co	3	876,000
	Swedeland	Alan Wood Steel Co	2	454,800
Total			78	23,563,650

[1] Capacity for ferroalloys totaled 706,800 net tons.

TABLE 4.—Consumption of pig iron and ferrous scrap, 1952–54, by type of furnace, in short tons

Type of furnace and raw material	1952	1953	1954
Open-hearth furnaces:			
Pig iron	14,529,565	17,935,307	12,925,526
Scrap:			
Home	7,206,952	(1)	(1)
Purchased	5,481,996	(1)	(1)
Total	12,688,948	14,066,093	9,430,661
Total pig iron and scrap	27,218,513	32,001,400	22,356,187
Bessemer converters:			
Pig iron	932,761	804,239	529,889
Scrap:			
Home	65,935	(1)	(1)
Purchased	19,523	(1)	(1)
Total	85,458	99,913	84,721
Total pig iron and scrap	1,018,219	904,152	614,610

See footnotes at end of table.

TABLE 4.—Consumption of pig iron and ferrous scrap, 1952–54, by type of furnace, in short tons—Continued

Type of furnace and raw material	1952	1953	1954
Electric steel furnaces:			
Pig iron	18,197	20,241	13,299
Scrap:			
Home	767,441	(1)	(1)
Purchased	1,011,772	(1)	(1)
Total	1,779,213	1,811,299	1,218,634
Total pig iron and scrap	1,797,410	1,831,540	1,231,933
Cupola furnaces:			
Pig iron	433,106	340,314	286,471
Scrap:			
Home	345,131	(1)	(1)
Purchased	468,636	(1)	(1)
Total	813,767	739,522	642,935
Total pig iron and scrap	1,246,873	1,079,836	929,406
Air furnaces:			
Pig iron	54,303	55,399	40,456
Scrap:			
Home	93,706	(1)	(1)
Purchased	58,013	(1)	(1)
Total	151,719	148,760	109,261
Total pig iron and scrap	206,022	204,159	149,717
Blast furnaces:			
Pig iron			
Scrap:			
Home	659,159	(1)	(1)
Purchased	646,624	(1)	(1)
Total	1,305,783	1,580,139	1,099,013
Total pig iron and scrap	1,305,783	1,580,139	1,099,013
Ferroalloy furnaces:			
Pig iron			
Scrap:			
Home			
Purchased	1,626	1,054	185
Total	1,626	1,054	185
Total pig iron and scrap	1,626	1,054	185
Miscellaneous uses:			
Pig iron	1,058,474	[2] 1,453,354	[2] 805,782
Scrap:			
Home	7,653	(1)	(1)
Purchased	65,098	(1)	(1)
Total	72,751	[2] 59,799	[2] 54,328
Total pig iron and scrap	1,131,225	1,513,153	860,110
Total Pennsylvania:			
Pig iron	17,026,406	20,608,854	14,601,423
Scrap:			
Home	9,145,927	(1)	(1)
Purchased	7,753,288	(1)	(1)
Total	16,899,287	18,506,601	12,639,738
Total pig iron and scrap	33,925,671	39,115,433	27,241,161

[1] Data not available.
[2] Includes small quantity used in crucible furnaces.

TABLE 5.—Annual steel capacity, January 1, 1955, by type of furnace, in net tons

[American Iron and Steel Institute]

District	Location	Operator	Open hearth		Bessemer		Electric and crucible		Total annual capacity (net tons)
			No.	Annual capacity (net tons)	No.	Annual capacity (net tons)	No.	Annual capacity (net tons)	
Pittsburgh-Youngstown	Aliquippa	Jones & Laughlin Steel Corp	5	1,182,000	3	582,000			1,764,000
		Vulcan Crucible Steel Co					2	9,600	9,600
	Beaver Falls	Babcock & Wilcox Co					4	229,450	229,450
	Brackenridge	Allegheny Ludlum Steel Corp	5	240,000			13	506,700	746,700
	Braddock	United States Steel Corp. (central operations).	16	2,179,000					2,179,000
	Braeburn	Braeburn Alloy Steel Corp					2	20,730	20,730
	Bridgeville	Universal-Cyclops Steel Corp					5	70,160	70,160
	Butler	Armco Steel Corp	6	429,000			1	70,000	499,000
	Carnegie	Union Electric Steel Corp					2	26,760	26,760
	Clairton	United States Steel Corp. (central operations).	12	1,064,000					1,064,000
	Donora	American Steel & Wire Div	13	1,015,000					1,015,000
	Duquesne	United States Steel Corp. (central operations).	12	1,302,000			4	160,000	1,462,000
	Farrell	Sharon Steel Corp	12	1,000,000					1,000,000
	Harmony Twp	Byers Co., A. M					2	75,000	75,000
	Latrobe	American Locomotive Co	3	103,000					103,000
		Latrobe Steel Co					5	24,000	24,000
		Vanadium-Alloys Steel Co					4	12,000	12,000
	McKeesport	Firth Sterling, Inc					3	20,040	20,040
		National Tube Div	3	1,206,000	3	240,000			1,446,000
	Midland	Crucible Steel Co. of America	9	972,000			5	312,000	1,284,000
	Monaca	Colonial Steel Co					2	30,000	30,000
	Monessen	Pittsburgh Steel Co	12	1,404,000					1,404,000
	Munhall	United States Steel Corp. (central operations).	25	3,766,000					3,766,000
	Oakmont	Edgewater Steel Co	3	89,890					89,890
	Pittsburgh	Heppenstall Co	2	50,470			1	5,080	55,550
		Jones & Laughlin Steel Corp	21	3,096,000			1	1,500	3,097,500
	Washington	Jessop Steel Co					4	33,490	33,490
	West Homestead	Mesta Machine Co	4	85,000			1	20,000	105,000

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TABLE 5.—Annual steel capacity, January 1, 1955, by type of furnace, in net tons—Continued

District	Location	Operator	Open hearth		Bessemer		Electric and crucible		Total annual capacity (net tons)
			No.	Annual capacity (net tons)	No.	Annual capacity (net tons)	No.	Annual capacity (net tons)	
Eastern	Bethlehem	Bethlehem Steel Co	31	3,056,000			4	158,000	3,214,000
	Burnham	Baldwin-Lima-Hamilton Corp	5	169,920			1	40	169,960
	Coatesville	Lukens Steel Co	12	750,000					750,000
	Erie	Erie Forge & Steel Corp	5	234,000					234,000
	Fairless Hills	United States Steel Corp. (central operations).	9	2,200,000					2,200,000
	Harrisburg	Central Iron & Steel Co	5	360,000			1	46,000	406,000
		Harrisburg Steel Corp	3	100,750					100,750
	Irvine	National Forge & Ordnance Co					3	25,000	25,000
	Ivy Rock	Alan Wood Steel Co	8	625,000					625,000
	Johnstown	Bethlehem Steel Co	21	2,330,000					2,330,000
		United States Steel Corp. (central operations).	2	19,000			2	6,000	25,000
	Milton	Milton Steel Products Div. Merritt-Chapman & Scott Corp.					2	67,000	67,000
	Philadelphia	Disston & Sons, Inc., Henry					2	25,000	25,000
		Midvale Co	4	146,100			7	201,000	347,100
	Phoenixville	Phoenix Iron & Steel Co	6	432,000					432,000
	Reading	Carpenter Steel Co					7	85,800	85,800
	Steelton	Bethlehem Steel Co	12	1,356,000					1,356,000
Total			286	30,962,130	6	822,000	90	2,240,350	34,024,480

NONMETALS

Cement.—Production of cement from plants in Pennsylvania decreased 1 percent in 1954 compared with 1953. However, shipments increased 2 percent in tonnage and 3 percent in value. Shipments sold at an average value per barrel of $2.74.

Allegheny, Berks, Butler, Lawrence, Lehigh, Montgomery, Northampton, and York Counties had producing cement plants in 1954. The leading center of production was in Lehigh and Northampton Counties, where 16 plants supplied 70 percent of the cement shipments in 1954. The second center of production was in western Pennsylvania (in Allegheny, Butler, and Lawrence Counties), where 5 plants produced 20 percent of the 1954 shipments.

TABLE 6.—Finished portland cement produced, shipped, and in stock, 1945–49 (average) and 1950–54

Year	Active plants	Production (barrels)	Shipped from mills			Stocks at mills on December 31 (barrels)
			Barrels	Value		
				Total	Average per barrel	
1945–49 (average)	24	30, 909, 757	30, 947, 223	$60, 264, 076	$1. 95	2, 492, 261
1950	24	38, 646, 260	39, 450, 611	94, 604, 230	2. 40	2, 503, 633
1951	24	41, 981, 431	41, 560, 431	107, 035, 506	2. 58	2, 980, 404
1952	24	39, 437, 971	40, 037, 761	103. 388, 586	2. 58	2, 390, 588
1953	24	42, 799, 409	42, 093, 765	114, 002, 846	2. 71	3, 096, 231
1954	24	42. 514, 803	43, 068, 234	117, 912, 299	2. 74	2, 542, 800

TABLE 7.—Shipments of portland cement, 1953–54, by counties

County	1953		1954	
	Barrels	Value	Barrels	Value
Northampton	21, 856, 592	$59, 193, 931	22, 485, 987	$61, 507, 393
Lehigh	7, 810, 118	20, 867, 553	7, 712, 313	20, 519, 985
Allegheny, Lawrence, Butler, Berks	8, 608, 573	22, 604, 891	8, 561, 019	23, 146, 906
Montgomery, York	3, 818, 482	11, 336, 471	4, 308, 915	12, 738, 015
Total	42, 093, 765	114, 002, 846	43, 068, 234	117, 912. 299

Clays.—For the third consecutive year, production of clays in Pennsylvania decreased, dropping 1 percent in tonnage compared with 1953, owing mainly to declining production of miscellaneous clay. Production of clay, consisting of fire clay, miscellaneous clay, and kaolin, was reported in 37 counties. Fire clay and kaolin were the most important and represented 84 percent of the value of clay produced in 1954. Fire clay was reported mined in Armstrong, Beaver, Blair, Butler, Cambria, Centre, Clarion, Clearfield, Clinton, Elk, Fayette, Huntingdon, Indiana, Jefferson, Lancaster, Lawrence, McKean, Somerset, and Westmoreland Counties. Miscellaneous clay was reported mined in Adams, Allegheny, Armstrong, Beaver, Berks, Bucks,

Cambria, Chester, Clarion, Clearfield, Clinton, Columbia, Dauphin, Delaware, Fayette, Greene, Jefferson, Lancaster, Lawrenee, Luzerne, Lycoming, McKean, Montgomery, Northumberland, Schuylkill, Snyder, Washington, Westmoreland, and York Counties. Kaolin was produced in Blair and Cumberland Counties. Fire clay was used

TABLE 8.—Clays sold or used by producers, 1945–49 (average), and 1950–54

Year	Kaolin		Fire clay		Miscellaneous clay		Total	
	Short tons	Value	Short tons	Value	Short tons	Value	Short tons	Value
1945–49 (average)	38, 428	$142, 616	1, 634, 294	$5, 993, 405	1, 451, 269	$1, 230, 065	3, 123, 991	$7, 366, 086
1950	62, 626	250, 383	1, 731, 855	7, 149, 589	1, 687, 713	1, 415, 346	3, 482, 194	8, 815, 318
1951	75, 415	306, 045	2, 205, 794	11, 653, 734	1, 949, 358	2, 127, 771	4, 230, 567	14, 087, 550
1952	(1)	(1)	[1] 1, 992, 099	[1] 10, 726, 085	1, 739, 031	1, 913, 779	3, 731, 130	12, 639, 864
1953	(1)	(1)	[1] 1, 703, 280	[1] 8, 001, 196	1, 872, 142	1, 986, 937	[2] 3, 575, 287	[2] 9, 987, 928
1954	(1)	(1)	[1] 1, 901, 644	[1] 8, 602, 399	1, 622, 754	1, 641, 086	3, 524, 398	10, 243, 485

[1] To avoid disclosure of individual company figures, kaolin has been combined with fire clay.
[2] Revised figure.

TABLE 9.—Clays sold or used by producers, in 1953–54, by kinds and uses, in short tons

Uses	Fire clay		Miscellaneous clay	
	1953	1954	1953	1954
Refractories:				
Firebrick and block [1]	835, 642	[2] 858, 165		1, 938
Foundries and steelwork	82, 410	91, 426	13, 868	(3)
Miscellaneous refractories	94, 334	93, 903		
Heavy clay products	642, 701	826, 231	1, 614, 017	1, 438, 936
Paint fillers or extenders			6, 640	434
Cement	(3)	(3)	216, 923	155, 363
Undistributed	[4] 48, 193	[4] 31, 919	[5] 20, 694	[5] 26, 083
Total	1, 703, 280	1, 901, 644	1, 872, 142	1, 622, 754

[1] Includes high-alumina brick.
[2] Includes kaolin.
[3] Included with "Undistributed" to avoid disclosure of individual company operations.
[4] Includes kaolin and fire clays for pottery and stoneware, and other uses.
[5] Includes miscellaneous clay for foundries and steelwork, pottery and stoneware, tile-high grade, miscellaneous fillers, and other uses.

TABLE 10.—Clays sold or used by producers in 1954, by counties

County	Short tons	Value	Percent total	County	Short tons	Value	Percent total
Allegheny	135, 898	$251, 996	3	Fayette	167, 284	$1, 030, 091	10
Armstrong	170, 563	674, 972	7	Greene	3, 977	4, 971	(1)
Beaver	446, 113	1, 259, 979	12	Luzerne	45, 284	36, 227	(1)
Blair	36, 195	127, 898	1	Lycoming	434	868	(1)
Cambria	28, 909	76, 315	1	McKean	107, 387	259, 714	3
Chester	62, 115	77, 594	1	Montgomery	69, 013	113, 905	1
Clarion	88, 753	221, 815	2	Somerset	63, 000	229, 198	2
Clearfield	512, 724	3, 019, 912	29	Washington	47, 784	57, 705	1
Clinton	46, 174	237, 062	2	Undistributed [2]	1, 461, 090	2, 385, 319	23
Cumberland	31, 701	177, 944	2	Grand total	3, 524, 398	10, 243, 485	100

[1] Less than 1 percent.
[2] Includes Adams, Berks, Bucks, Butler, Centre, Columbia, Dauphin, Delaware, Elk, Huntingdon, Indiana, Jefferson, Lancaster, Lawrence, Northumberland, Schuylkill, Snyder, Westmoreland, and York Counties and a quantity unspecified by county.

principally in producing fire brick and block and heavy clay products, while miscellaneous clay was used mainly in the production of heavy clay products.

Lime.—For the first time in 4 years, the production of lime in Pennsylvania decreased, dropping 19 percent in tonnage and 18 percent in value. Twenty-one companies active in 1954 operated a total of 27 plants in 17 counties. Quicklime and hydrated lime were produced for various uses, of which chemical and industrial were the most important in total value, followed by building, agricultural, and refractory materials.

TABLE 11.—Lime sold by producers, 1945–49 (average) and 1950–54 by uses

Year	Agricultural		Building		Chemical and industrial	
	Short tons	Value	Short tons	Value	Short tons	Value
1945–49 (average)	143,224	$1,394,465	79,484	$1,007,441	761,024	$6,971,331
1950	135,182	1,530,991	134,052	1,944,178	650,756	7,110,931
1951	134,559	1,532,813	126,048	1,740,850	741,673	8,551,011
1952	131,007	1,463,596	123,049	1,675,987	768,319	8,228,875
1953	116,863	1,367,594	114,839	1,575,387	865,747	9,766,852
1954	129,146	1,537,849	120,661	1,697,895	816,044	9,753,519

Year	Refractory		Total	
	Short tons	Value	Short tons	Value
1945–49 (average)	(1)	(1)	983,732	$9,373,237
1950	166,461	$2,076,974	1,086,451	12,663,074
1951	178,820	2,435,380	1,181,100	14,260,054
1952	180,606	2,473,755	1,202,981	13,842,213
1953	237,851	3,300,281	1,335,300	16,010,114
1954	15,732	217,047	1,081,583	13,206,310

[1] Included with chemical and industrial to avoid disclosure of individual company operations.

TABLE 12.—Lime sold or used by producers, 1953–54, by counties

County	1953		1954	
	Short tons	Value	Short tons	Value
Armstrong	955	$11,364	1,159	$15,124
Centre	580,050	6,561,742	487,735	5,573,465
Lebanon	(1)	(1)	194,664	2,040,179
Mifflin	(1)	(1)	5,565	47,000
Montgomery	(1)	(1)	72,661	1,139,504
Snyder	(1)	(1)	3,360	21,949
Somerset	(1)	(1)	1,321	5,284
York	144,187	1,932,181	(2)	(2)
Undistributed	[2] 610,108	[2] 7,504,827	[2] 315,118	[2] 4,363,805
Total	1,335,300	16,010,114	1,081,583	13,206,310

[1] Included with "Undistributed."
[2] Includes tonnage and value for counties that must be concealed as indicated by footnote reference 1 and for the following counties: Bedford, Butler, Chester, Franklin, Fulton, Lancaster, Lycoming (1954), Montour, and Northumberland.

Mica.—Output of mica decreased in 1954 compared with 1953. General Mining Associates remained the sole producer of mica in Pennsylvania. The mica was dried, air-separated, and bagged, mainly for use in paints, rubber, welding rods, and insulation.

Pyrite.—Output of pyrite decreased in 1954 compared with 1953. Pyrite was produeed as a byproduet of Bethlehem Steel Co. iron mining at Cornwall, Lebanon County.

Pyrophyllite (Sericite Schist).—Produetion of serieite sehist dereased 23 pereent in tonnage and inereased 73 percent in value in 1954 compared with 1953. Output eame from one mine in Adams County operated by Summit Mining Corp. and was sold for use as an inseeticide filler.

Sand and Gravel.—Produetion of sand and gravel in 1954 in Pennsylvania decreased 3 pereent in tonnage and less than 0.5 pereent in value eompared with 1953. The sand was produeed for use principally as building and paving aggregate. Other uses were as fire or furnaee sand, molding sand, engine sand, grinding and polishing

TABLE 13.—Sand and gravel sold or used by producers, 1953–54, by uses

	1953		1954	
	Short tons	Value	Short tons	Value
Sand:				
Molding and fire or furnace	495,439	$1,247,242	439,741	$982,139
Building	4,086,393	4,888,762	3,598,674	4,715,867
Paving	2,111,500	2,895,286	2,163,749	2,855,245
Grinding, polishing, and blast	350,376	761,075	(1)	(1)
Engine	220,136	440,007	168,584	398,243
Glass and filter	611,168	1,906,436	(1)	(1)
Other	205,944	454,209	958,522	3,086,096
Total sand	8,680,956	12,593,017	7,329,270	12,037,590
Gravel:				
Building	3,917,298	4,835,198	3,523,242	4,873,109
Paving	2,578,982	3,096,656	3,301,277	3,599,913
Railroad ballast	57,956	31,850	(1)	(1)
Other	80,191	135,670	64,655	85,378
Total gravel	6,634,427	8,099,374	6,889,174	8,558,400
Grand total	14,715,383	20,692,391	14,218,444	20,595,990

[1] Included with "Other" to avoid disclosure of individual company operations.

TABLE 14.—Sand and gravel sold or used by producers, 1953–54, by counties

County	1953		1954	
	Short tons	Value	Short tons	Value
Allegheny	1,176,987	[1]$2,328,900	(2)	(2)
Beaver	1,399,061	1,778,693	981,212	$1,170,481
Bucks	4,622,674	5,518,309	5,305,524	8,103,521
Carbon	330,246	439,022	336,780	476,048
Crawford	104,360	146,127	224,929	181,507
Dauphin	344,704	74,509	513,868	154,401
Erie	399,233	471,688	232,826	251,927
Luzerne	299,166	381,170	392,347	438,969
Somerset	1,249	2,355	(2)	(2)
Undistributed [3]	6,037,703	[1] 9,551,618	6,230,958	9,819,136
Total	14,715,383	20,692,391	14,218,444	20,595,990

[1] Revised figure.
[2] Included with "Undistributed."
[3] Includes tonnage and value for counties that must be concealed, as indicated by footnote reference 2, and for the following counties: Armstrong, Bedford, Berks, Blair, Bradford, Cameron (1954), Clearfield, Columbia, Cumberland (1954), Fayette, Forest (1954), Franklin, Huntingdon, Lancaster, Lawrence, Lycoming, McKean, Mercer, Mifflin, Monroe, Montgomery, Montour (1954), Northampton, Northumberland, Philadelphia, Pike (1954), Schuylkill (1954), Venango, Warren, Wayne, and Wyoming.

sand, blast sand, glass sand, and filter sand. Gravel was sold for use as building and paving aggregate and railroad ballast. Production came from 41 counties; Buck County ranked first, followed by Armstrong, Beaver, and Lycoming Counties.

Slate.—The production of slate in 1954 in Pennsylvania decreased slightly in tonnage (4 percent) and value, compared with 1953. Slate was sold for 10 principal uses such as: Flour, granules, roofing, flagging, structural and sanitary, and blackboards and bulletin boards. Production came from Northampton (leading producer), Lehigh and York counties.

TABLE 15.—Slate sold by producers, 1945–49 (average) and 1950–54, by uses

Year	Number of operators	Roofing		Millstock		Other uses	Total value
		Squares (100 square feet)	Value	Square feet	Value	Value	
1945–49 (average)	22	114,134	$1,812,937	2,074,986	$891,673	$1,170,485	$3,875,095
1950	27	124,280	2,341,127	2,724,450	1,559,587	1,645,300	5,546,014
1951	25	134,180	2,681,072	2,589,090	1,416,657	1,591,141	5,688,870
1952	18	93,200	1,866,479	2,078,020	1,227,471	1,393,698	4,487,648
1953	18	86,116	1,688,167	2,363,266	1,452,320	1,279,125	4,419,612
1954	17	77,819	1,487,870	2,505,839	1,616,981	1,314,588	4,419,439

Stone.—Production of stone in Pennsylvania in 1954 increased 55 percent in tonnage and 27 percent in value over 1953. Sandstone, granite, basalt, limestone, and miscellaneous stone were produced in 44 counties. Of the total value, sandstone represented 7 and limestone 82 percent.

Sandstone was marketed as both dimension and crushed stone. Dimension sandstone was prepared as rough construction, rubble, rough architectural, and flagging stone. Crushed sandstone was used as road material and ganister rock. The ganister rock was used by refractory plants in the State in manufacturing silica brick.

Only dimension granite was produced from quarries in Pennsylvania in 1954. It was used principally as building stone in the form of rough construction or dressed architectural.

Both dimension and crushed basalt were produced in 1954. Dimension basalt was produced from a quarry in Chester County. Crushed basalt was produced in Adams, Berks, Bucks, Chester, Delaware, and Montgomery Counties and used principally as road material and railroad ballast.

Dimension limestone was produced in Bucks, Chester, Lancaster, and Somerset Counties for use in rough construction and as rubble. Government-and-contractor limestone was produced by the Pennsylvania Turnpike Commission in Bedford County and as road material in Dauphin County by the Pennsylvania Department of Highways. Crushed limestone was produced in 35 counties and used as a fluxing agent, concrete aggregate, and railroad ballast and for agricultural purposes.

Quantities of various miscellaneous stones such as serpentine, soapstone, gneiss, and mica schist were quarried for local use in 1954.

TABLE 16.—Stone sold or used by producers, 1953–54, by uses

Use		1953		1954	
		Quantity	Value	Quantity	Value
Dimension stone:					
Building stone	short tons	[1] 142, 795	[1] $749, 909	153, 774	$798, 270
Monumental stone	cubic feet	[2]	[2]	[2]	[2]
Curbing and flagging	cubic feet	78, 205	131, 046	65, 785	122, 902
Total dimension stone (approximate equivalent in short tons)		[1] 148, 947	[1] 880, 955	159, 270	921, 172
Crushed and broken stone:					
Riprap	short tons	[3] 164, 096	[3] 253, 169	[2]	[2]
Crushed stone	do	13, 594, 967	20, 093, 938	16, 544, 373	23, 924, 243
Furnace flux (limestone)	do	9, 351, 478	16, 514, 344	6, 483, 488	10, 857, 065
Refractory	do	588, 583	3, 481, 474	496, 848	2, 247, 516
Agricultural (limestone)	do	895, 093	2, 712, 796	887, 684	2, 787, 111
Other uses	do	[3] 1, 426, 249	[3] 3, 849, 745	15, 945, 210	20, 430, 392
Total crushed and broken stone	do	26, 020, 466	46, 905, 466	40, 357, 603	60, 246, 327
Undistributed		23, 194	307, 608	4, 883	25, 920
Grand total		[1] 26,192, 607	[1] 48,094, 029	40, 521, 756	61, 193, 419

[1] To avoid disclosing confidential information, certain totals are incomplete.
[2] Included with "Undistributed."
[3] Incomplete, the portion not included being combined as "Undistributed."

TABLE 17.—Stone sold or used, 1953–54, by counties

County	1953		1954	
	Short tons	Value	Short tons	Value
Adams	1, 709, 564	$2, 840, 907	[1]	[1]
Allegheny	[1]	[1]	2, 384	$16, 687
Berks	1, 285, 947	1, 921, 930	2, 696, 525	2, 675, 091
Blair	719, 042	1, 553, 391	739, 439	1, 380, 314
Bucks	545, 824	1, 077, 378	596, 794	1, 159, 742
Butler	1, 637, 341	3, 047, 082	[1]	[1]
Centre	946, 361	1, 962, 012	1, 740, 967	3, 139, 442
Chester	904, 541	1, 511, 107	1, 881, 649	2, 651, 785
Clinton	184, 312	273, 705	200, 661	283, 625
Cumberland	425, 797	620, 492	[1]	[1]
Dauphin	1, 011, 884	1, 573, 146	1, 001, 069	1, 620, 432
Delaware	867, 486	1, 489, 690	751, 939	1, 195, 829
Fayette	26, 797	92, 020	[1]	[1]
Franklin	386, 469	558, 009	507, 778	782, 062
Huntingdon	706, 762	2, 522, 074	422, 953	1, 249, 564
Indiana	[1]	[1]	3, 174	13, 954
Juniata	102, 109	187, 889	117, 394	157, 563
Lancaster	1, 402, 481	2, 306, 854	1, 447, 783	2, 404, 485
Lawrence	2, 109, 010	4, 999, 865	2, 865, 643	4, 489, 297
Lebanon	1, 176, 502	1, 956, 494	2, 120, 169	3, 504, 360
Lehigh	214, 221	324, 997	2, 424, 223	2, 377, 604
Lycoming	354, 559	620, 425	339, 272	585, 135
Mifflin	992, 458	1, 132, 528	708, 959	1, 011, 575
Monroe	77, 717	170, 336	[1]	[1]
Montgomery	2, 428, 403	4, 173, 198	3, 310, 373	5, 315, 096
Northampton	[1]	[1]	7, 092, 538	7, 032, 948
Northumberland	[1]	[1]	114, 000	201, 650
Perry			72, 118	114, 668
Schuylkill	24, 362	82, 479	23, 553	167, 848
Snyder	[1]	[1]	82, 488	181, 511
Susquehanna	[1]	[1]	88, 832	227, 988
Union	[1]	[1]	205, 400	358, 100
Westmoreland	303, 846	778, 761	[1]	[1]
York	1, 112, 710	2, 526, 760	2, 156, 892	3, 822, 708
Undistributed	[2] 4, 536, 102	7, 790, 500	6, 806, 787	13, 072, 356
Total	[3] 26, 192. 607	[3] 48, 094, 029	40, 521, 756	61, 193, 419

[1] Included with "Undistributed."
[2] Includes tonnage and value for counties indicated by footnote reference 1 and for the following counties: Armstrong, Bedford, Fulton, Greene (1954), Lackawanna (1954), Luzerne, Mercer, Montour, Potter (1954), and Somerset.
[3] To avoid disclosing confidential information, total is incomplete.

Sulfur.—Output of byproduct sulfur increased in quantity and in value in 1954 compared with 1953. Recoverable elemental sulfur, as reported by producing companies in Pennsylvania, consisted of brimstone recovered as a byproduct in the liquid purification of gas. In addition, quantities of hydrogen sulfide were recovered.

Tripoli.—The tripoli produced in Pennsylvania was a rottenstone mined from open pits at Antes Fort and Muncy in Lycoming County; it was dried and ground for use as an abrasive material and a filler in phonograph records. Output of tripoli in 1954 decreased slightly in tonnage compared with 1953 but increased in total value.

REVIEW BY COUNTIES

Production of metals and nonmetals in 1954 was reported in 65 of the 67 counties in Pennsylvania. Coal was produced in 37 counties in 1954. A discussion of metals, nonmetals, and coal by counties is given below. Production of petroleum, natural gas, and natural-gas liquids in Pennsylvania is not covered in the county descriptions.

Adams.—The Hanover quarry at Hanover was operated by Bethlehem Quarry Co. for limestone for blast-furnace-flux use, road material, and agricultural purposes.

Miscellaneous clay was produced by Alwine Brick Co., New Oxford, and Gettysburg Drain Tile Works, Gettysburg, for use in manufacturing heavy clay products.

The Funkhouser Co. produced roofing granules and stone flour at Charmian.

Sericite schist was produced by Summit Mining Corp., Bendersville, for use in insecticides.

Allegheny.—The Pittsburgh Coke & Chemical Co. operated a cement plant on Neville Island. Universal Atlas Cement Co., a subsidiary of United States Steel Corp., operated the Universal Plant. Production at both plants consisted of air-entrained and non-air-entrained cement.

Leading producers of bituminous coal in 1954 were Allegheny Pittsburgh Coal Co., William Aloe Coal Co., Butler Consolidated Coal Co., Campbell Coal Co., Duquesne Light Co., Greensburg-Connellsville Coal & Coke Co., Harmar Coal Co., Pittsburgh Coal Co., Renton Coal Co., and Republic Steel Corp. Bituminous coal was produced both by underground and strip-mining methods.

Bank-run sand for use as molding sand was produced by James H. McCrady Sand Co., Acmetonia, and Sidwell Loam Sand Co., Cheswick (Acmetonia). The Sand & Gravel, Inc., operated a dredge for producing sand for structural and paving purposes.

Six companies, Milliken Brick Co., Inc. (Wilkinsburg), Van Ormer Brick Co., Inc. (Pitcairn), McFetridge Bros. Brick Co. (Creighton), M. Lanz Brick & Tile Co. (Pittsburgh), Glassmere Brick & Tile Co. (Glassmere), and Bridgeville Brick Co. (Bridgeville), produced miscellaneous clay from open-pit mines. All the production was reported as used in the manufacture of heavy clay products, including building brick and tile, paving brick, draintile, and sewer pipe.

Sandstone for use as rubble was produced by Francis Matesia near Cuddy.

TABLE 18.—Value of mineral production in Pennsylvania, 1953–54, by counties [1] [2]

County	1953	1954	Minerals produced in 1954 in order of value
Adams	(3)	(3)	Stone, clays, sericite schist.
Allegheny	$68,689,537	$47,237,526	Coal, cement, sand and gravel, clays, stone.
Armstrong	18,257,287	12,887,775	Coal, sand and gravel, stone, clays, lime.
Beaver	4,404,121	4,127,840	Coal, clays, sand and gravel.
Bedford	(3)	(3)	Stone, coal, lime, sand and gravel.
Berks	6,981,802	[4] 8,125,686	Cement, stone, clays, sand and gravel
Blair	2,514,949	2,243,120	Stone, coal, clays, sand and gravel.
Bradford	(3)	(3)	Sand and gravel, coal.
Bucks	6,615,801	9,283,263	Sand and gravel, stone, clays.
Butler	15,717,723	12,402,225	Coal, cement, stone, lime, clays.
Cambria	(3)	54,433,637	Coal, clays.
Cameron	202,536	(3)	Coal, sand and gravel.
Carbon	15,737,578	12,058,552	Do.
Centre	12,961,879	10,371,114	Lime, coal, stone, clays.
Chester	3,079,500	3,956,879	Stone, lime, clays.
Clarion	8,252,830	6,884,248	Coal, clays.
Clearfield	26,956,739	(3)	Coal, clays, sand and gravel.
Clinton	2,334,426	2,796,862	Coal, stone, clays.
Columbia	(3)	(3)	Coal, sand and gravel, clays.
Crawford	146,127	181,507	Sand and gravel.
Cumberland	620,492	(3)	Stone, clays, sand and gravel.
Dauphin	3,430,355	1,949,554	Stone, coal, sand and gravel, clays.
Delaware	1,738,981	1,498,374	Stone, sulfur, clays.
Elk	(3)	(3)	Coal, clays.
Erie	814,429	251,927	Sand and gravel.
Fayette	(3)	41,568,911	Coal, clays, sand and gravel, stone.
Forest	----------	(3)	Sand and gravel.
Franklin	756,356	871,121	Stone, sand and gravel, lime.
Fulton	(3)	(3)	Coal, stone, lime.
Greene	(3)	(3)	Coal, stone, clays.
Huntingdon	5,768,138	4,503,817	Sand and gravel, stone, coal, clays.
Indiana	(3)	(3)	Coal, clays, stone.
Jefferson	(3)	(3)	Coal, clays.
Juniata	187,889	157,563	Stone.
Lackawanna	40,661,196	(3)	Coal, stone.
Lancaster	4,442,736	[4] 2,851,943	Stone, sand and gravel, lime, clays.
Lawrence	15,982,552	14,323,801	Cement, stone, coal, sand and gravel, clays.
Lebanon	19,578,767	[4] 16,539,086	Iron ore, stone, lime, copper, cobalt, pyrite, gold, silver.
Lehigh	21,467,115	21,016,605	Cement, stone, slate.
Luzerne	109,025,467	98,416,288	Coal, stone, sand and gravel, clays.
Lycoming	1,577,791	1,379,065	Sand and gravel, stone, coal, tripoli, lime, clays.
McKean	(3)	(3)	Coal, clays, sand and gravel.
Mercer	(3)	(3)	Coal, sand and gravel, stone.
Mifflin	(3)	1,949,753	Stone, sand and gravel, lime.
Monroe	(3)	(3)	Stone, sand and gravel.
Montgomery	8,906,414	9,282,824	Stone, cement, lime, clays, sand and gravel.
Montour	522,062	(3)	Stone, lime, sand and gravel.
Northampton	63,990,491	[4] 65,728,778	Cement, slate, stone, sand and gravel.
Northumberland	36,077,811	30,730,257	Coal, stone, clays, sand and gravel.
Perry	----------	114,668	Stone.
Philadelphia	(3)	(3)	Sand and gravel.
Pike	----------	(3)	Do.
Potter	----------	(3)	Stone.
Schuylkill	(3)	69,458,677	Coal, sand and gravel, stone, clays.
Snyder	155,233	[4] 251,007	Stone, clays, lime.
Somerset	21,305,181	12,584,983	Coal, stone, clays, sand and gravel, lime.
Sullivan	----------	132,841	Coal.
Susquehanna	(3)	227,988	Stone.
Tioga	(3)	354,608	Coal.
Union	(3)	358,100	Stone.
Venango	(3)	(3)	Coal, sand and gravel.
Warren	(3)	(3)	Sand and gravel.
Washington	(3)	78,505,987	Coal, clays.
Wayne	(3)	(3)	Sand and gravel.
Westmoreland	27,424,760	16,164,974	Coal, stone, clays.
Wyoming	(3)	(3)	Sand and gravel.
York	8,761,070	9,403,485	Stone, cement, lime, slate, sand and gravel, clays, mica.
Undistributed	535,573,748	237,977,639	
Total	1,121,622,000	925,545,000	

[1] Excludes value of production for LP-gases, natural gas, natural gasoline, peat, and petroleum by counties, but included with "Undistributed."
[2] Excludes value of clays and stone used in the manufacture of lime and cement.
[3] Value included with "Undistributed."
[4] Excludes value of anthracite which is included with "Undistributed" to avoid disclosure of individual company figures.

Armstrong.—Sand and gravel was produced by Glacial Sand & Gravel Co., Parrtown; Allegheny Sand & Loam Co., Leechburg; and Lee Don, Inc., Manorville Sands Division, Manorville. J. K. Davison & Bros. operated a dredge on the Allegheny River in Armstrong County for producing sand and gravel.

Michigan Limestone Division, United States Steel Corp., operated the Kaylor mine, East Brady, and Buffalo Creek mine, Worthington, in 1954. The plant at the Buffalo Creek mine was abandoned during the year. The limestone was used for flux, road material, cement, and agricultural purposes.

Eight companies produced clay in 1954 in Armstrong County. Continental Clay Products Co (Kittanning), Freeport Brick Co. (Freeport), Kittanning Refractories, Inc. (Kittanning), Graff-Kittanning Clay Products Co. (Worthington), Harbison-Walker Refractories Co. (Templeton), Haws Refractories Co. (Kittanning), Kittanning Brick Co. (Adrian), and Worthington Ceramics Co. (Worthington) produced plastic fire clay. In addition, Kittanning Refractories, Inc., produced miscellaneous clay. Graff-Kittanning Clay Products Co. and Worthington Ceramics Co. produced clay from an open pit; and Kittanning Refractories, Inc., produced from both underground and open-pit mines; the other five companies produced from underground mines.

Three companies, all near Kittanning, produced lime in 1954. C. D. McCanna in Valley Township, produced both quicklime and hydrated lime for agricultural use. Craig Claypool (Manor Township) and Walter Hershberger operated plants for the production of agricultural hydrated lime.

Leading producers of bituminous coal in 1954 were Allegheny River Mining Co., Harl E. Bowser Coal Co., Compton Coal Co., J. Russell Cravener Coal Co., Heffelfinger Coal Co., Iseman Bros. Coal Co., Leechburg Mining Co., Maral Co., Meck Mining Co., and Joe F. Sherman Coal Co. Bituminous coal was produced from both strip and underground mines.

Beaver.—Negley Fire Clay Co. (New Galilee), Davis Coal Co. (Darlington), Ralph A. Veon, Inc. (Darlington and New Galilee), Pen-Hio Clay Co. (Cannelton), and Sunnyside Coal Mining Co. (Darlington) produced and sold fire clay from open-pit mines. Production of fire clay from underground mines was reported by McLain Fire Brick Co., Beaver; Standard Clay Mfg. Co., Fallston; and Colonial Clay Products Co., Fallston. Metropolitan Clay, Inc., Darlington, produced fire clay from an open pit. Eastvale Clay Products Co., Beaver Falls, produced fire clay from an underground mine for use at its local plant and also for sale on the open market. Brighton Clay Products Co., New Brighton, and Friedl-Elverson Pottery Co. produced miscellaneous clay from open pits; in addition, Friedl-Elverson Co. produced fire clay. Fire clay produced in Beaver County was used in producing refractories and heavy clay products. The miscellaneous clay was used in manufacturing art pottery, flowerpots, glaze slip, and heavy clay products.

Sand and gravel was produced by open-pit methods by Shippingport Sand & Gravel Co. and Beaver Sand Co. Ellwood Stone Co. produced only sand. Dravo Corp., Keystone Division, and Iron City Sand & Gravel Corp. dredged sand and gravel from the Ohio River.

Leading producers of bituminous coal in 1954 were C & S Coal Co., Colonial Gas Coal Co., Courtney Coal Co., Dow-Lin Coal Co., Keystone Valley Coal Co., Lake Erie Coal Co., Negley Fire Clay Co., North Sewickley Coal Co., Sunnyside Coal Co., and Tasa Coal Co. Bituminous coal was produced by underground and strip-mining methods.

Bedford.—The Leap Ganister Rock Co. produced ganister from a quarry near Hyndman. The Ashcom, Everett quarry was worked by the New Enterprise Stone & Lime Co., Inc., for limestone usable for road material and agricultural purposes. Limestone for use as road material was produced by the Pennsylvania Turnpike Commission in Bedford County.

Hydrated lime, for agricultural purposes and for use in manufacturing silica brick, was produced by the New Enterprise Stone & Lime Co., Inc., at a plant near Everett. J. Mason Kerr operated the Gravel Pit Kilns near Hyndman to produce agricultural quicklime.

Feight Bros. crushed and screened bank-run sand for use as building sand.

Leading producers of bituminous coal in 1954 were C. E. Clark Contracting Co., Colledge Coal Co., Lumsted Coal Co., Martin, McIntyre & McKnight, Rockhill Coal Co., and Rohm Coal Co. Bituminous coal was produced by both underground and open-pit methods.

Berks.—Cement rock and limestone were produced by Allentown Portland Cement Co. near Oley and Evansville for use at its Evansville cement plant.

The John T. Dyer Quarry Co. produced diabase traprock for use as road material and railroad ballast from the Monocacy and Birdsboro quarries near Birdsboro. Basalt was also produced near Orcland by Stove Traprock Co. for construction use. Berks Products Corp., Reading, produced crushed limestone for use as road material. Eastern Lime Corp. worked the Hinterleiter quarry near Kutztown for limestone usable in manufacturing cement and for paving and agricultural purposes. E. J. Breneman, Inc., sold crushed limestone as road material from a quarry in Spring Township.

Schildt Bros., Temple, and John H. Gring, Sinking Spring (Spring Township), crushed and screened bankrun sand and gravel for use as building material.

Glen-Gery Shale Brick Corp. produced miscellaneous clay for use at its Shoemakersville and Wyomissing brick plants from open-pit mines.

Blair.—Quartzite was produced by Basalt Trap Rock Co., Williamsburg; General Refractories Co., Clarksburg; and J. L. Hartman Co., Sproul. The ground rock was used in the production of silica brick as road material, riprap, and railroad ballast. Limestone was produced by New Enterprise Stone & Lime Co., Inc. (Roaring Spring and Hollidaysburg), Sproul Lime & Stone Co. (Claysburg), John A. Ellenberger (Eldorado Quarry, Altoona), and Chimney Rocks Lime & Stone Co. (Hollidaysburg), mainly for road material. A small quantity was sold for the production of lime.

Fire clay was produced from open pits by Woodbury Clay Co. (Williamsburg), Blair Clay Products Co. (Altoona), and Garfield Refractories Co. (Cresson), for use in producing firebrick and fire-clay

mortar. Kaolin, for use in the production of firebrick and block, was produced by Grannas Bros. at the No. 1 mine near Williamsburg.

Bank-run sand was produced by Frankstown Sand Supply Co. and George H. Trude, both at Hollidaysburg, for use as structural material.

Producers of bituminous coal in 1954 were Argyle Coal Co., Burkhart Coal Co., Cavalier Coal Co., Inc., Lawrence Sherbine, and Stone Bridge Coal Co. Bituminous coal was produced by stripping and underground methods.

Bradford.—Karl D. Shiner processed bank-run sand for use as building and paving sand. Quantities of gravel for use as building and paving material were also produced. The Pennsylvania Department of Highways produced gravel for use in paving construction.

The only producer of bituminous coal in 1954 was Mott Coal Co.; the total production was produced by stripping methods.

Bucks.—Durnan & Good (Upper Black Eddy), Tullytown Sand & Gravel Co. (Tullytown), and Riegelsville Sand & Gravel Co. (Riegelsville) processed bank-run sand and gravel for building and paving purposes. Amico Sand & Gravel Co., Morris, produced sand and gravel from a wet pit for use as building material, and Brennan Sand Co., Tullytown, produced bank sand for use as molding sand. A. L. Lewis operated a dry pit near New Hope for producing building sand and building and paving gravel. The Warner Co. was active in dredging sand and gravel from the Delaware River and from Van Seiver Lake. This material was used as building and paving material.

Dimension granite was produced by Coopersburg Granite Co., Inc. Crushed basalt for road material and railroad ballast was produced by the General Crushed Stone Co., Quakertown, and by David D. Derstine, Telford. Rubble (limestone) was produced from an open quarry in Middletown Township by Karpinski Stone Quarry Co. Limestone as road material was quarried by New Hope Crushed Stone Lime Co., New Hope; Locust Point Stone Quarries, Mechanicsburg; and Bituminous Service Co., Buckingham. Miscellaneous building stone and crushed stone were produced by C. Ducciarelli & Sons at Edison, and crushed miscellaneous stone (bluestone) as road material was produced by George Wiley at Point Pleasant.

Miscellaneous clay was produced near Quakertown by the Quakertown Brick & Tile Co., Inc., for use at its local plant in producing heavy clay products.

Butler.—Penn-Dixie Cement Corp. produced non-air-entrained cement by the wet process at its West Winfield Cement plant. This company produced limestone, shale, and sand for use as raw material.

Limestone for agricultural purposes was produced by Grove City Limestone Co. at Branchton. In addition to limestone as road material, the Michigan Limestone Division, United States Steel Corp., produced limestone from the Annandale mine, Boyers, for use in manufacturing cement and as fluxing material.

The Mercer Lime & Stone Co., Branchton, produced both quicklime and hydrated lime, principally for use in open-hearth and electric furnaces, for water purification, and as agricultural lime.

Pittsburgh & Erie Coal Co. produced plastic fire clay from a pit near Claytonia for sale to manufacturers of refractories.

Leading producers of bituminous coal in 1954 were Allison Engineering Co., Butler Consolidated Coal Co., Carbon Coal Co., Inc., Chutz Bros. Coal Co., Clarion Coal Mining Co., De Marsh Coal Co., Kerry Coal Co., Linda Coal & Supply Co., Sunbeam Coal Corp., and Tri-County Fuel Co. Bituminous coal was produced both by underground- and strip-mining methods.

Cambria.—Fire clay was produced from underground mines by Patton Clay Mfg. Co. (Patton), Hiram Swank's Sons, Inc. (South Fork), and Harbison-Walker Refractories Co. (Blandburg) for use in manufacturing refractories. A small quantity of miscellaneous clay was produced by Triangle Clay Products Co. from an open pit near Johnstown.

Leading producers of bituminous coal in 1954 were Barnes & Tucker Coal Co., Berwind-White Coal Mining Co., Bethlehem Mines Corp., Eastern Gas & Fuel Associates, Ebensburg Coal Co., Johnstown Coal & Coke Co., Pennsylvania Coal & Coke Corp., C. E. Powell Coal Co., Rich Hill Coal Mining Co., and Sterling Coal Co. Bituminous coal was produced by underground- and strip-mining methods.

Cameron.—Thomson & Montgomery operated a quarry and fixed plant near Shippen Township, Emporium, for producing quantities of sand usable as concrete aggregate.

John E. Rydesky and S. Brake Slyder produced bituminous coal in 1954 at stripping operations.

Carbon.—The Alliance Sand Co. at Palmerton quarried sand usable as paving, building, furnace, and engine sand. Stony Ridge Silica Corp. produced sand from a quarry near Little Gap for use as building and furnace sand while the Butz Lumber Co. produced paving sand from a quarry near Palmerton. Wagner Sand Co., Inc. processed bank-run sand from a pit near Hazleton for use as paving material and engine sand. A small quantity of paving gravel also was produced in Carbon County.

Leading producers of anthracite were Beaver Meadow Mining Co., Coaldale Mining Co., Inc., John G. Connell, Glen Alden Coal Co., Jackson Coal Co., Lehigh Navigation Coal Co., Panther Valley Coal Co., Payne Coal Co., Penn Rich Contracting Co., and Weston Dodson & Co., Inc.

Centre.—Two companies (National Gypsum Co. and Warner Co. both of Bellefonte) produced quicklime and hydrated lime. The Standard Lime & Stone Co., Pleasant Gap, produced only hydrated lime. The lime was sold for various uses, of which the more important were in open-hearth furnaces, electric furnaces, and in manufacturing paper. H. R. Greist Mineral Co., State College, produced sulfur mud.

Quartzite, produced by McFeely Brick Co. from a quarry at Port Matilda, was shipped to its Latrobe plant for use in producing silica brick. Five companies produced limestone from quarries in Centre County. National Gypsum Co. operated an open-pit mine and Warner Co. an underground mine for limestone for use mainly in manufacturing lime and road material. Five miles south of Bellefonte in Pleasant Gap, Whiterock Quarries produced limestone from an open quarry, and Standard Lime & Stone Co. produced from an underground mine. Both companies operated crushing plants and sold crushed limestone as flux, road material, and for agricultural

purposes. The Valley View Lime Co. operated the Miller quarries and crushing plant in Marion Township for producing fluxing limestone.

Fire clay of the flint variety was produced from an underground mine by General Refractories Co., Orviston, and from an open-pit mine by J. H. Francc Refractories Co., Snow Shoe. This clay was used in the production of firebrick.

Producers of bituminous coal in 1954 were Robert Bailey, R. S. Carlin, Inc., Cherry Run Coal Mining Co., Inc., Elliot Coal Mining Co., H & R Coal Co., Michael Koshko, Joseph A. Padisak, Rice Bros. Coal Co., River Hill Coal Co., and Rougeux, Trimpey, and Rougeux Coal Co. Bituminous coal was produced from both underground and strip mines.

Chester.—Dimension sandstone was produced from quarries by Albert Rotunno, New Garden Township, West Grove; Alfred V. Mouldar, and Abram T. Minor, both of Avondale; and Bacton Hill, Malvern. Dimension basalt for rough construction purposes was produced by French Creek Granite Co. near St. Peters. Rushland Quarry produced basalt and sold crushed basalt as riprap and road material. W. E. Johnson, Inc., operated a quarry near Paoli for the production of dimension limestone for rough construction purposes and crushed limestone as road material. The only other limestone producer in Chester County was the Warner Co., operating the Cedar Hollow quarry near Devault. The company used the limestone for producing quicklime and hydrated lime mainly for building and agricultural use, and in sewage and tradewaste treatment. Quantities of limestone also were sold as flux and road material.

Miscellaneous clay for manufacturing building brick was mined by McAvoy Vitrified Brick Co., Phoenixville, and by Phillip D. Cope near Sylmor for use in manufacturing flowerpots.

Bradford Hills Quarry, Inc., produced miscellaneous stone for concrete aggregate.

Clarion.—Frank B. Pope Co., New Bethlehem, and Climax Fire Brick Co., Climax, produced both plastic and flint fire clays. McLain Fire Brick Co., Division of H. K. Porter Co., Inc., St. Charles, produced only plastic fire clay. Lucinda Clay Co., William Judy & Sons, and J. F. Eisworth Estate, all at Lucinda, produced flint fire clay. New Bethlehem Tile Co. produced both plastic fire clay and miscellaneous clay for use in the manufacture of heavy clay products.

Leading producers of bituminous coal in 1954 were Allison Engineering Co., Mac Coal Co., Mays Coal Co., Joe F. Sherman Coal Co., Harold A. Siegel Coal Co., W. Pershing Stahlman, G. A. Stiles & Co., West Freedom Mining Co., Wingert Contracting Co., Inc., and Zackerl Coal Co. Bituminous coal was produced both from underground and strip mines.

Clearfield.—Clearfield County ranked first among Pennsylvania counties in the production of clays in 1954. Production from Clearfield County consisted of fire clay and miscellaneous clay. Thirteen companies produced fire clay in 1954; 7 produced plastic fire clay, 4 flint fire clay, and 2 both varieties. Of the companies producing plastic fire clay, only Hiram Swank's Sons, Inc. (Boardman), and Laclede-Christy Co. (Clearfield) produced from underground mines. Thomas Bros. Coal Co. (Curwensville), W. K. Turner & Sons (Wallaceton)

and Artie K. Baughman (Bigler) marketed their entire production of plastic fire clay. Williamsgrove Clay Products Co. (Bigler), Clearfield Clay Products Co. (Curwensville) Hiram Swank's Sons, Inc. (Boardman) and Laclede-Christy Co. (Bigler) produced clay for their own use. Six of the 7 companies produced the fire clay for use in manufacturing firebrick and block, and the other company used the clay in manufacturing heavy clay products. North American Refractories Co. (Curwensville, Grampian, and Luthersburg) General Refractories Co. (Clearfield) T. & T. Clay Co. (West Decatur), and Swistock & George (Fanbourn) produced flint fire clay in Clearfield County. North American Refractories Co. and General Refractories Co. operated underground mines for flint fire clay, but the other companies produced from open-pit mines. The entire production of flint fire clay was used in manufacturing refractories. Both plastic and flint fire clays were produced from underground and open-pit mines by Laclede-Christy Co. from mines near Clearfield and Osceola Mills and by Harbison-Walker Refractories Co. near Clearfield. Production from these mines was used in manufacturing refractories. Robinson Clay Products Co. operated an open-pit mine near Clearfield, producing plastic fire clay and miscellaneous shale for use by the company in producing heavy clay products.

Bells Landing Sand & Gravel, Bells Landing, and Mervyl and Kathryn Yeager produced sand and gravel for use as paving and building material.

Leading producers of bituminous coal in 1954 in Clearfield County were Robert Bailey Benjamin Coal Co., Bradford Coal Co., Cambria-Clearfield Mining Co., Howard Coal Mining Co., Imperial Coal Corp., Lingle Coal Co., Morrisdale Coal Mining Co., Pennbrook Contracting Corp., River Hill Coal Co., and Stinard Coal Co. Bituminous coal was produced from both underground and strip mines.

Clinton.—Fire clay was mined by General Refractories Co., Beech Creek; Kelsey Mining Co., Gallagher Township; and North American Refractories Co., Lock Haven. Kelsey Mining Co. produced from an open pit, but the other two companies operated underground mines. Miscellaneous clay was produced from an open pit by Mill Hall Clay Products, Inc., Castanea.

The Lycoming Silica Sand Co. operated a quarry and crusher at Salona, and sold the crushed limestone as road material and railroad ballast.

Leading producers of bituminous coal in 1954 were Joseph Antosh, Harry J. Batschelet Estate, C. V. Fink & Son, Lloyd Holmes, Parson Bros., Pennbrook Contracting Co., Burton & Joseph Peters, John E. Teeter, Veres Bros., and D. G. Wertz Coal Co. Bituminous coal was produced from both underground and strip mines.

Columbia.—The Bloomsburg Sand & Gravel Co., Scott Township, was the only producer of sand and gravel in Columbia County marketing the material for building purposes.

Miscellaneous clay was produced by Alliance Clay Products Co. from a pit near Mifflinville for use in producing heavy clay products.

Leading producers of anthracite in 1954 were Centralia Mining Co., Hazle Brook Coal Co., L. & M. Coal Co., Philadelphia & Reading Coal & Iron Co., Pine Ridge Mining Co., Raven Run Coal Co.,

Rooster Coal Co., Scotch Valley Sales Co., Sullivan Trail Coal Co., and Susquehanna Collieries Division of M. A. Hanna Co.

Crawford.—Bank-run sand and gravel was mined and processed by W. L. Dunn (Cochranton), Moyers Bros. Sand & Gravel Supply Co. (Sadsbury Township (Conneaut Lake)), Hasbrouck Sand & Gravel (Titusville), Meadville Supply Co. (Woodcock Township (Saegertown)), and Fairfield Sand & Gravel Co. (Fairfield Township (Cochranton)) for use as structural and paving material. A small quantity of gravel was produced by the Pennsylvania Department of Highways in Crawford County.

Cumberland.—Limestone was produced by Hempt Bros. (Camp Hill), Valley Quarries, Inc. (Shippensburg), and R. W. Smith & Sons (Bowmansdale) and was sold as crushed limestone for road material.

This county was a major source of kaolin in Pennsylvania in 1954. An open pit near Mount Holly Springs was operated by the Philadelphia Clay Co., and the kaolin was used as a cement whitener.

Raymond A. Bender & Son, Dickenson Township, processed bank-run sand for use as building material. C. & L. Goodhart, Walnut Bottom, produced both sand and gravel.

Dauphin.—Limestone was produced from open quarries by H. E. Millard Lime & Stone Co., Swatara Station; Bethlehem Quarry Co., Steelton; and Hoffman Bros. and Wilson Inc., Elder Quarry, Swatara Township. In addition, H. E. Millard produced limestone from an underground mine. The limestone was crushed and sold for various uses, including flux, road material, and agricultural purposes.

H. E. Millard Lime & Stone Co. also operated a lime plant at Swatara Station.

Highspire Sand & Gravel Co., Ltd., Harrisburg, excavated sand and gravel from a wet pit and processed the material for paving use. Structural and paving gravel was also produced by the Pennsylvania Department of Highways in Dauphin County.

Miscellaneous clay was produced from open pits by Glen-Gery Shale Brick Corp. near Middletown and Bethlehem Quarry Co. near Steelton.

Producers of anthracite in 1954 were Dayton Coal Co., Howard Koppenhaven, Lykens Hi-Grade Coal Co., M & N Coal Co., Reilly Contracting Co., Spring Glen Coal Co., and Upper Dauphin Coal Co.

Delaware.—Granite, usable for building construction, was produced by Lima Building Stone Quarry, Inc. The General Crushed Stone Co. operated a quarry and crushing mill near Glen Mills and marketed crushed granite as road material. V. DiFrancesco & Sons produced basalt from the Devault and Llanerch quarries, Havertown, marketing the crushed basalt as railroad ballast and road material.

The Philadelphia Brick Co. produced miscellaneous clay from its open pit in Darby Township.

Sinclair Refining Co. produced brimstone as a byproduct in the liquid purification of gas at its Marcus Hook refinery.

Elk.—Near St. Marys, fire clay was produced from underground and open-pit mines by William J. Meyer, and miscellaneous clay was produced from an open pit by St. Marys Sewer Pipe Co. The fire clay was used in producing firebrick, while the miscellaneous clay was used in producing heavy clay products.

Leading producers of bituminous coal in 1954 were Blue Valley Coal Co., Brandy Camp Coal Co., Ralph DeLullo, L. W. Gallagher, Peter Micale Estate, New Shawmut Mining Co., P & N Coal Co., Perry & Van Slander, Wabash Ridge Corp., and Walburn Coal Co. Bituminous coal was produced from both strip and underground mines. A small quantity of sulfur mud was produced in 1954.

Erie.—Bank-run sand was mined and processed by Nickel Plate Sand & Gravel Co., Fairview, and Wagner Concrete Building Products, Fairview Township, while Peerless Mineral Products Co. produced bank-run sand. Sand and gravel was dredged from a lake in Girard Township by North Girard Concrete Works. Kelley Island Lime Transport Co. produced structural sand and engine sand. The Pennsylvania Department of Highways produced gravel in 1954 for use in road construction. Mines were worked for peat.

Fayette.—Sand, for use as glass, molding, and furnace sand, was produced from an open pit by Dunbar Corp., Dunbar. McClain Sand Co., Inc., produced sand and gravel by dredging a river in Spring Hill Township and marketed the material for building purposes.

Flint fire clay was produced from open-pit mines by Robert N. Matthews, Uniontown; and Harbison-Walker Refractories Co. (formerly owned by the Union Fire Brick Co.) and Big Savage Refractories Corp., both of Ohiopyle. In addition, Big Savage Refractories Corp. produced plastic fire clay. Layton Fire Clay Co., Layton, operated an open-pit mine for producing miscellaneous clay for use in manufacturing heavy clay products.

General Refractories Co. produced sandstone from an underground mine near Childs for use in producing silica brick, while Connellsville Blue Stone Co. produced from a quarry near Connellsville for use as road material. Miscellaneous stone for building stone was produced by Lynns Quarry at Smithton, Pa.

Leading producers of bituminous coal in 1954 were Bridgeview Coal Co., Chellini Coal Co., Davidson-Connellsville Coal & Coke Co., Eastern Gas & Fuel Associates, Farm Coal Co., Latrobe Construction Co., Wm. Piccolomini Coal Co., Republic Steel Corp., the United States Steel Corp., and Weirton Coal Co. Bituminous coal was produced from both underground and strip mines.

Forest.—The Tionesta Sand & Gravel Co., Inc., operated a river dredge near Tionesta for producing sand and gravel. The Pennsylvania Department of Highways also produced gravel for paving purposes.

Franklin.—Six companies were active in 1954 for producing limestone. Limestone for use as road material was produced by Valley Quarries, Inc., Fry Coal & Stone Co., Binkley Bros., Inc., Baer & Martin, and Frank L. Heinbaugh. In addition Valley Quarries, Inc., and Fry Coal & Stone Co. prepared limestone for use as railroad ballast and for agricultural purposes respectively. Stewart & Gaston produced agricultural limestone at its plant. Sand for building purposes was mined, crushed, and screened by the Caledonia Sand Co. near Fayetteville. Sand also was produced by Mount Cydonia Sand Co.

Frank L. Heinbaugh, at a plant near Mercersburg, produced quicklime for use as agricultural lime.

Fulton.—H. B. Mellott Estate, Inc., operated the Charleton quarry, Worfordsburg, and Morton quarry, Big Cove Tannery. The limestone for both quarries was crushed at the Big Cove Tannery crusher and sold as road material and for use in producing lime.

Oscar Martz operated a lime plant in Knobsville for the production of agricultural lime.

Rockhill Coal Co. was the only producer of bituminous coal in 1954, producing from a strip mine.

Greene.—Sandstone for use as road material was produced from an open quarry near Jefferson by C. Wilbur Acklin.

The only producer of clay in Greene County was Greene County Brick & Stone Co., producing miscellaneous clay from an open-pit mine near Waynesburg.

Leading producers of bituminous coal in 1954 in Greene County were the Buckeye Coal Co., Crucible Steel Co. of America, Duquesne Light Co., Emerald Coal & Coke Co., Jones & Laughlin Steel Corp., McCartney Coal Co., Molnar Bros. Coal Co., Mather Pickands & Co., Rosedale Coal Co., and the United States Steel Corp. The entire production of bituminous coal came from underground mines.

Huntingdon.—Ganister was produced by Harbison-Walker Refractories Co., Mount Union, and North American Refractories Co., Three Springs, for use in producing silica brick. Pennsylvania Glass Sand Corp., operating a quarry and crusher at Mapleton Depot, produced quartzite silica for use mainly as glass sand and abrasives. Limestone for road material was produced by New Enterprise Stone & Lime Co., McConnellstown; Warner Co., Tyrone (Union Furnace); and Tyrone Lime & Stone Co., Stover Quarry, Tyrone. Warner Co. also produced crushed limestone for use as railroad ballast, and Tyrone Lime & Stone Co. sold crushed limestone for agricultural purposes and as dusting material for coal mines.

Plastic fire clay was produced by Harbison-Walker Refractories Co. from an underground mine near Mount Union for use in manufacturing glass refractories. Alexandria Fire Clay Co. also produced plastic clay, but marketed the crude clay for use in manufacturing mortar.

Bank-run sand was processed by the Warrior Ridge Sand Co. at a site near the crest of Warrior Ridge.

Producers of bituminous coal in 1954 were Chamberlain Bros. Coal Co., Helm Coal Co., Ramper & Mort, Rockhill Coal Co., and Wrays Hill Coal Co. Bituminous coal was produced from both underground and strip mines.

Indiana.—Hiram Swank's Sons, Inc., produced plastic fire clay from an underground mine near Clymer for refractory use.

Smicksburg Lime, the only producer of stone in Indiana County, sold crushed limestone for agricultural purposes.

Leading producers of bituminous coal in 1954 were The Arcadia Co., Clearfield Bituminous Coal Corp., Crichton Coal & Coke Co., Heshbon Coal Co., Imperial Coal Corp., P & N Coal Co., Pennsylvania Electric Co., Pine Township Coal Co., Rochester & Pittsburgh Coal Co., and Westmoreland Mining Co. Bituminous coal was produced from both underground and strip mines.

Jefferson.—Plastic fire clay was produced from underground mines by Hanley Co., Summerville; Brockway Clay Co., Brockway;

and Henry O'Neill & Co., Brookville. In addition, the Brockway Clay Co. operated an open-pit mine near Brockway to produce miscellaneous clay for manufacturing heavy clay products.

Leading producers of bituminous coal in 1954 were Armagost & Moore Coal Co., DuBois Coal Mining Co., Kann & Gutsie Coal Co., Kniseley Coal Co., Krach & Gearhart Coal Co., Maple Hill Coal Co., Minns Coal Co., Northwestern Mining & Exchange Co., Pulford Coal Co., and W. Pershing Stahlman. Bituminous coal was produced from both underground and strip mines.

Juniata.—Ganister for use in manufacturing silica brick was produced by the National Refractories Co., Inc., near the Van Dyke plant, Thompsontown. Limestone was quarried by W. N. Quigley near Mifflintown and prepared at a local crushing plant for road-construction use. The J. E. Baker Co. also operated a quarry and crusher near Bainbridge for producing stone as road material.

Lackawanna.—Leading producers of anthracite in 1954 were John Booth, Inc., Burke Coal Co., DeAngelis Coal Co., Hudson Coal Co., Moffat Coal Co., Motley Coal Co., Northwest Coal Co., Old Forge Coal Co., Turnpike Coal Co., and Village Slope Coal Co. A quantity of sandstone as rubble was produced by the Pennsylvania Department of Highways.

Lancaster.—A total of 12 companies produced limestone in Lancaster County in 1954, of which 2 produced both dimension and crushed limestone and 10 produced only crushed limestone. Dimension limestone was produced by D. M. Stoltzfus & Son, Inc., from a quarry at Talmage and by J. C. Showalter near Blue Ball. Crushed limestone was produced by D. M. Stoltzfus & Son, Inc., from quarries near Talmage and Quarryville; Ivan M. Martin, Inc., Blue Ball; Binkley & Ober, Inc., East Petersburg; A. G. Kurtz & Son Estate, Denver; J. Miller Eshleman, Landisville; J. C. Showalter, Blue Ball; David M. Burkholder, Martindale; Heisey Bros., Rheems; Erbs Limestone Quarry, Lititz; the J. E. Baker Co., Bainbridge; Landis Stone Meal Co., Rheems; and L. F. Zook & Sons, Bareville. Limestone produced in Lancaster County was sold mainly for road construction and agricultural purposes.

Milton Grove Sand, Inc., Mount Joy, and Hempt Bros., Elizabethtown, mined and processed sand for use as paving material.

Whitaker Clay Co. produced plastic fire clay from an open-pit mine near Narvon and marketed the crude material for use in manufacturing refractories. Glen-Gery Shale Brick Corp. operated the Ephrata open-pit mine, and Lancaster Brick Co. operated the Lancaster open-pit mine to produce miscellaneous clay for use in manufacturing heavy clay products at the company local plants.

The Maxwell limekiln, operated by Amos K. Stoltzfus near Elverson, produced quicklime and hydrated lime for use as fertilizer. The J. E. Baker Co., operating the Billmeyer plant, produced dead-burned dolomite for use as refractory material.

Lawrence.—The cement industry of the county is based upon the abundance of exceptionally pure limestone. Bessemer Limestone & Cement Co. produced limestone for use in its Bessemer cement plant (wet process). Medusa Portland Cement Co. produced limestone for use at its Wampum plant, producing cement by the dry process.

The Hillsville plant operated by Michigan Limestone Division,

United States Steel Corp., quarried and crushed limestone for use as flux, road material, and in the production of cement. Bessemer Limestone-Cement Co. operated a quarry and crusher to produce limestone usable as flux and road material and in producing cement. Limestone for use as flux, road material, dusting for coal mines, and agricultural purposes was produced by New Castle Lime & Stone Co. in Mahoning Township.

Mahoning Valley Sand Co., West Pittsburgh (Taylor Township), processed bank-run sand and gravel for sale as paving material. Superior Sand & Supply Co., Eastbrook (Hickory Township), mined and processed bank-run sand and gravel for use in manufacturing cement blocks and ready-mix concrete.

Miscellaneous clay was produced from open-pit mines by Metropolitan Brick, Inc., Bessemer; Fenati Brick Co., Inc., Hickory Township; and Keystone Sand & Gravel Co., New Castle. Metropolitan Brick, Inc. also produced fire clay.

Leading producers of bituminous coal in 1954 were Ambrosia Coal & Construction Co., Bessemer Limestone & Cement Co., Bowie Coal Co., Buckeye Coal Co., Colonial Gas Coal Co., Corry Excavating & Mining Co., Hickory Coal Co., Lake Erie Coal Co., Marshall Mining Co., and West Freedom Mining Co. Bituminous coal was produced from both underground and strip mines, but the greater part of production came from strip mines. Peat also was produced in Lawrence County in 1954.

Lebanon.—The Bethlehem Steel Co. operated the Cornwall mine in 1954—the only metal-producing mine in the State. The crude ore yielded iron, copper, gold, silver, cobalt, and pyrite.

A quarry and crusher were operated by North American Refractories Co. near Womelsdorf to produce ganister used in manufacturing silica brick. The rock was transferred by an aerial tram from the quarry to the brick plant. Limestone, as road material, was produced from a quarry near Annville by Becker Bros.; Fiala Crushed Stone Corp., Annville; Pennsylvania Aggregates Co., Cornwall; and Henry K. Smith, Palmyra. In addition to road material, H. E. Millard Lime & Stone Co. produced limestone at the Annville and Palmyra quarries for use as metallurgical flux, agricultural limestone, in the manufacture of lime and cement, and for miscellaneous uses. Calcite Quarry Corp. operated a quarry and crusher near Lebanon to produce crushed limestone usable as flux and road and foundry material and in manufacturing cements.

The Annville and Palmyra plants operated by H. E. Millard Lime & Stone Co. produced both quicklime and hydrated lime. The lime was marketed for various uses, principally for metallurgical use, agricultural purposes, water purification and softening, and mason lime.

Lehigh.—Four companies producing cement in Lehigh County in 1954 were: Coplay Cement Mfg. Co., Coplay; Giant Portland Cement Co., Egypt; Lehigh-Portland Cement Co., Ormrod and Fogelsville; and the Whitehall Cement Mfg. Co., Cementon. All four companies produced either cement rock or limestone as a raw material for use in their production of cement.

A quarry and crusher were operated near Ormrod by Lehigh Stone Co. for the production of limestone used as road material.

The only producer of slate in 1954 in Lehigh County was Penn Big Bed Slate Co., Inc. The slate was processed into a diversity of commodities, including roofing, blackboards, structural and sanitary products, bulletin boards, aquarium slate, and electrical slate.

Luzerne.—Leading producers of anthracite in 1954 were Glen Alden Coal Co., Harry E. Coal Co., Hudson Coal Co., Jeddo-Highland Coal Co., Kehoe-Berge Coal Co., Knox Coal Co., Lehigh Valley Coal Co., Newport Excavating Co., No. 9 Coal Co., and Susquehanna Collieries Division of M. A. Hanna Co.

Dimension sandstone was produced by Coon Certified Concrete Co. at the North Mountain Quarry, Sweet Valley, and quantities of crushed sandstone were sold from this quarry for use as road material. The General Crushed Stone Co. operated an open quarry and plant at White Haven to produce crushed sandstone usable as railroad ballast and road material. Jersey Central Lines produced limestone in Luzerne County for use as railroad ballast.

Four companies produced both sand and gravel: Airport Sand & Gravel Co., West Wyoming; Frank S. Sgarlat Estate, Forty Fort; Honey Hole Sand & Stone Co., Butler Township; and Glendale Sand & Stone Co., Avoca. Cunfer Bros. was also active in 1954 near Drums but produced only sand.

The Hazleton Brick Co., Hazleton, Luzerne County, was the only producer of clay which was used at its local plant in manufacturing building brick. Peat mines were worked, and Luzerne County was the leading producer in 1954.

Lycoming.—J. A. Eck & Sons, Inc., and Lycoming Silica Sand Co., both at Montoursville, produced sand and gravel in 1954, mainly for structural and paving uses.

Flagstone was quarried by John T. Morgan at Slate Run. Lycoming Silica Sand Co. operated the Lime Buff quarry and plant near Muncy to produce crushed limestone usable as road material. Crushed limestone as road material and for agricultural purposes was produced by Pine Creek Lime & Stone Co., Jersey Shore, and limestone for agricultural purposes was produced by Kenneth E. Fromm near Muncy.

The Keystone Filler & Mfg. Co. operated a quarry near Muncy for producing tripoli. The company dried, crushed, and pulverized the material in a local mill for use as abrasive material. Penn Paint & Filler Co., Antes Fort, dried and ground rottenstone for use as an abrasive and filler material.

The Chippewa plant was operated by Muncy Lime Products, Inc., to produce quicklime for use in fertilizers.

Keystone Filler & Mfg. Co. produced miscellaneous clay for use in paints from an open-pit mine near Muncy.

Producers of bituminous coal in 1954 were O. R. Carson, Fisher & Smith, Kaznowski & Kaznowski, and Thomas Coal Co. Bituminous coal was produced from both underground and strip mines.

McKean.—Plastic fire clay was produced from open-pit mines by Mount Jewett Fire Clay Co., Mount Jewett, and Kaul Clay Products Co., Clermont. Miscellaneous clay was mined by Hanley Co., Lewis Run. Mount Jewett Fire Clay Co. was active until December, when fire destroyed the mill.

Molding sand was produced from an open pit by C. L. McGavern,

Jr. The United States Forest Service produced a small quantity of gravel for its use in McKean County.

Bituminous coal was produced in 1954 from stripping operations by Bowland Contractors, Kaul Clay Products Co., and P & K, Inc.

Mercer.—Sand and gravel producers in 1954 were Seidle Sand & Gravel Co., Jefferson Township; Liberty Stone Products Co., West Middlesex; and Transfer Sand & Gravel, Transfer. This material was sold principally to the structural and paving industries. Gravel was also produced by the Pennsylvania Department of Highways in Mercer County.

The White Rock quarry near Greenville was operated by the White Rock Silica Sand Co. to produce sandstone, which was crushed at a local plant and marketed for use in silica brick, road material, and beach and golf-course sand and for filter and foundry use.

Leading producers of bituminous coal in 1954 were Bobo Coal Co., Bowie Coal Co., Buckeye Coal Co., Center Coal Co., Coyer Coal Co., Fisher Mining Co., Liberty Stone Products Co., Mercer Coal Co., Plotts & Boyd Coal Co., and Earl Reed Coal Co. Bituminous coal was produced from both underground and strip mines, mostly from stripping operations. A small quantity of peat also was produced in 1954.

Mifflin.—Quartzite was produced by Haws Refractories Co. at Hawstone for use by the company in manufacturing silica brick. Quartzite silica was produced by the Pennsylvania Glass & Sand Corp. for use as abrasives and engine, foundry and glass sand. Bethlehem Quarry Co. produced limestone at the Naginey quarry and crushed the stone at a local mill, mainly for use as flux and road material.

Sand was quarried and processed by the Miller Silica Sand Co. near Burnham, as building, molding, and engine sand. James R. Kline's Sons operated a dredge on the Juniata River near Lewistown and produced sand for use in building.

Hydrated lime for use in fertilizers and as a refractory material was produced by Lewistown Lime Co. at its Reedsville plant.

Monroe.—Limestone was quarried and crushed near Hamilton by Thomas P. Rogers Stone Co., Inc., for use as road material and in manufacturing cement.

Sand and gravel for use as building material was produced by Coolbaugh Sand & Stone, Inc., Goulds Borough, and Steward White & Son, Stroudsburg (Stroud Township).

Montgomery.—Irregular-shaped bluestone for facing buildings was produced by William Bambi & Sons at Norristown. Ganister was produced by Firestone Products Co. (Eagle Hill) and Irvin D. Bill (Collegeville). M & M Stone Co. produced sandstone at Souderton for use as road material. Marcolina Bros., Inc., produced granite for construction use from the Hillcrest quarry, Cheltenham Township. Basalt was produced by Montgomery Stone Co. and R. K. Kibblehouse. Montgomery Stone Co. produced both rough and dressed granite at Montgomeryville. R. K. Kibblehouse produced granite as road material from a quarry at Perkiomenville. Limestone was quarried by G. & W. H. Corson, Inc., Plymouth Meeting; Bethlehem Quarry Co., Bridgeport; and Valley Forge Cement Co., West Conshohocken. Valley Forge Cement Co. production was used in manufacturing cement, but the other two companies' production was used mainly as flux or building material. A. Manero & Sons produced

mica schist at Edge Hill for use as building stone and refractory material.

Allentown Portland Cement Co. produced both air-entrained and non-air-entrained cement by the wet process at its West Conshohocken cement plant. Cement rock was also produced by this company as a raw material for cement.

Quicklime and hydrated lime, for use as mason's lime and agricultural lime, and dead-burned dolomite were produced by G. & W. H. Corson, Inc., at Plymouth Meeting.

Miscellaneous clay was produced from open-pit mines by Robinson Clay Products Co., Pottstown; Lansdale Brick Products Co., Lansdale; Norristown Brick Co., Norristown; and Keller-Whilldin Pottery Co., North Wales. The clay was used at company plants in manufacturing heavy clay products. The Keller-Whilldin Pottery Co., however, used the material in producing flowerpots.

Bank-run sand was processed for use as building sand by William Bambi & Sons near Norristown.

Magnesium carbonate and magnesium oxide were produced from dolomite by Philip Carey Manufacturing Co. and Keasbey & Mattison Co.

Montour.—Mausdale Quarry Co., Danville, and Narehood Bros., Milton, quarried and crushed limestone for use as road material.

Quicklime, usable as refractory material, was produced by Harry Tittle.

Sand was mined and processed by James M. Thomas near Danville for use by local construction companies.

Northampton.—In 1954 11 companies produced limestone in Northampton County. Bethlehem Steel Co. operated the Bethlehem Quarry and produced limestone for use as road material, railroad ballast, and stone sand and in asphalt products. The Trumbower Co., Inc., operated a quarry near Nazareth to produce limestone used as road material. The Jersey Central Lines Railroad produced limestone for railroad ballast. Penn-Dixie Cement Corp. (Nazareth and West Winfield), Hercules Cement Corp. (Stockertown), Keystone Portland Cement Co. (Bath), Lone Star Cement Corp. (Nazareth), Lehigh Portland Cement Co. (Sandts Eddy), Dragon Cement Co., Inc. (Northampton), and Alpha Portland Cement Co. (Martins Creek), quarried limestone for use in manufacturing cement.

Ten companies were active in producing cement in 1954 from Northampton County: Alpha Portland Cement Co., Martins Creek; Dragon Cement Co., Inc., Northampton; Hercules Cement Corp., Stockertown; Keystone Portland Cement Co., Bath; Lehigh Portland Cement Co., Sandts Eddy; Lone Star Cement Corp., Nazareth; National Portland Cement Co., Bethlehem; Nazareth Cement Co., Nazareth; Penn-Dixie Cement Corp. Plants Nos. 5 and 6, Bath; and Universal Atlas Cement Co., Northampton.

Fifteen companies produced slate in Northampton County. The 10 leading companies were Stephens-Jackson Co., Courtney Quarry, Pen Argyl; David Stoddard & Sons, Inc., West-Albion Quarry, Plainfield; Anthony Dally & Sons, Inc., Pen Argyl; Capitol Slate Co., Inc., East Bangor; Diamond Slate Co., Inc., Pen Argyl; Bangor Roofing Slate, Inc., Bangor; Parsons Bros. Slate Co., Pen Argyl;

Albion Vein Slate Co., West-Albion Quarry, Plainfield (Township); Doney Slate, Pen Argyl; and American Bangor Slate Co., Inc., Bangor. The slate was sold for various uses, mainly as roofing, structural and sanitary products, blackboards and bulletin boards, and flagging stone.

Bank-run sand and gravel was mined and processed by the Portland Sand & Gravel Co., Upper Mount Bethel Township, and W. J. Lowe & Sons, Bangor, principally as building and paving material.

Northumberland.—Sandstone was produced by Susquehanna Quarry Co. at Dalmatia for use as road material and railroad ballast. Eugene Meckley quarried limestone near Herndon and sold the crushed material for road material and agricultural purposes.

Miscellaneous clay was produced by Glen-Gery Shale Brick Co. and Watsontown Brick Co., both of Watsontown, for use at company local plants for producing heavy clay products. Watsontown Mineral Products Co. also produced miscellaneous clay for use in manufacturing linoleum and oilcloth and phonograph records.

Agricultural lime was produced by Clyde Starook at Sunbury.

Wilson Sand Plant, Montandon, screened bank-run sand for use in building.

Leading producers of anthracite in 1954 were Capitol Coal Co., Diminick Coal Sales Co., D. & Z. Coal Co., Philadelphia & Reading Coal & Iron Co., Phoenix Contracting Co., Raven Run Coal Co., Rosini Coal Co., Steam Coals, Inc., Stevens Coal Co., and Susquehanna Collieries Division of M. A. Hanna Co.

Perry.—Binkley Bros., Inc., quarried limestone as road material near Newport.

Philadelphia.—The Liberty Corp. operated the dredge *Freedom* near Philadelphia on the Delaware River and sold the screened and washed sand and gravel for building use.

Hydrogen sulfide was recovered by the Atlantic Refining Co. as a byproduct in the liquid purification of gas.

Pike.—The Pennsylvania Department of Highways produced a small quantity of paving gravel in Pike County in 1954.

Potter.—Oswayo Flag Stone Co. quarried miscellaneous stone near Shinglehouse, Pleasant Valley Township, for use as building stone, flagging, and road material.

Schuylkill.—Harbison-Walker Refractories' Andreas plant produced quartzite for use in manufacturing silica brick. Production of limestone as road material at the Andreas Quarry Co. quarry decreased compared with 1953 because the quarry was idle part of the year.

The Refractory Sand Co., Inc., near Andreas (West Penn Township) mined and processed sand for use as paving material, fire or furnace sand, and engine sand. A small quantity of gravel also was produced at this operation.

Miscellaneous clay was produced by Auburn Brick Co. for use at its local plant in producing heavy clay products.

Leading producers of anthracite in 1954 were Gilberton Coal Co., Indian Head Coal Co., Lehigh Navigation Coal Co., Locust Creek Coal Co., Mammoth Coal Co., Philadelphia & Reading Coal & Iron Co., Phoenix Contracting Co., St. Clair Coal Co., Weston Coal Co., and Yudacufski Bros. Contracting Co.

Snyder.—Limestone usable as road material and for agricultural purposes was quarried and crushed by the National Limestone Quarry at Middleburg.

Miscellaneous clay for use in manufacturing heavy clay products was produced from open-pit mines by Paxton Brick Co., Paxtonville, and Glen-Gery Shale Brick Corp., Beavertown.

Carton Comfort produced quicklime for agricultural purposes at Mount Pleasant Mills.

Somerset.—The Friedens Block Co., produced sandstone at Somerset for use in producing concrete blocks. Dimension limestone was produced by Keystone Lime Co. at Springs. A. C. Lottig produced limestone from an underground mine at Meyersdale for use in agriculture. Somerset Limestone Co., Inc., operated its open pit and crushing plant at Somerset to produce crushed limestone as road material.

Fire clay, for use in manufacturing heavy clay products, was mined from open pits by Otto Brick & Tile Works, Springs, and W. S. Compton Brick Co., Salisbury. General Refractories Co. and Hiram Swank's Sons, Inc., Hollsopple, produced fire clay from underground mines for use at local company plants for producing refractories.

Sand for building use was produced by Friedens Block Co., Somerset, and Robert D. Shaulis, Boswell. Boswell Sand Co. marketed its sand as paving material. In addition to sand, M. S. Mays & Son produced gravel for use in construction from a pit and fixed preparation plant near Berlin.

Leading producers of bituminous coal in 1954 were Acosta-Gray Co., Bird Coal Co., Coal Junction Coal Co., Croner, Inc., Dunlo Coal Co., Loyal Hanna Coal & Coke Co., W. A. Merrill Sons & Co., Reitz Coal Co., The Saxman Coal & Coke Co., and Shade Coal Mining Co. Bituminous coal was produced from both strip and underground mines.

Lime for agricultural purposes was produced by A. C. Lottig at Meyersdale.

Sullivan.—Anthracite was produced in 1954 by Bernice White Ash Coal Co., Bliss Coal Co., Mildred Coal Co., and Park Side Coal Co.

Susquehanna.—H. V. Hartley quarried sandstone at Lenoxville and marketed the sandstone as flagging stone. Susquehanna Crushed Stone Corp. operated a quarry and plant near Kingsley to produce crushed sandstone as road material.

Tioga.—Bituminous coal was produced from underground and strip mines by Gee & Locey, E. M. Hart & Son, Jones & Brague Mining Co., Martin & Lawson, and Tom Sterling Coal Co.

Union.—Limestone was quarried and crushed by Faylor Lime & Stone Co., Winfield, and sold as road material and for agricultural use. John L. Iddings produced crushed limestone at Mifflinburg for construction use.

Venango.—J. T. Eichholtz operated a pit near Coopertown (Jackson Township) to produce sand for paving use. Industrial Silica Corp. operated a pit and fixed preparation plant near Utica (Canal Township) to produce quartzite for use in steel molding sands. Dredging was carried on in the Allegheny River near Oil City by the Oil City Sand & Gravel Co. to produce sand and gravel usable in building

and road material. A small quantity of gravel also was produced by the Pennsylvania Department of Highways.

Bituminous coal was produced from stripping operations in 1954 by Bowie Coal Co., Boyles Coal & Supply Co., W. G. Brown Coal Co., C & M Contracting Co., Hitchman Coal & Coke Co., Serge Coal Co., and Zuck Coal Co.

Warren.—Robert M. Schatzle operated a pit and fixed preparation plant near Warren to produce bank-run sand and gravel for use in building. General Concrete Products Corp. operated a dredge on Allegheny River to produce and process sand and gravel for building and paving use. The Pennsylvania Department of Highways produced gravel as road material in Warren County.

Washington.—Miscellaneous clay was produced from open pits by Westmoreland Clay Products Co. (Washington), Monongahela Clay Products Co. (Monongahela), and Donley Brick Co. (Washington), for use at local company plants in manufacturing heavy clay products.

Leading producers of bituminous coal from underground and strip mines in 1954 from Washington County were Bethlehem Mines Corp., Greensburg-Connellsville Coal & Coke Co., Harmon Creek Coal Co., Jones & Laughlin Steel Corp., Mathies Coal Co., National Steel Corp., Ontario Mining Co., Pittsburgh Coal Co., Republic Steel Corp., and United States Steel Corp.

Wayne.—Sand and gravel was produced by Wayne Concrete & Sand Works, Lake Ariel; Charles Caputo, Honesdale; and Willis R. Black, Lake Ariel. The sand and gravel was sold mainly as building and paving material. A small quantity of gravel for paving use was produced by the Pennsylvania Department of Highways.

Westmoreland.—J. C. Beumont, North Belle Vernon, produced both rubble and flagging sandstone; J. G. Robinson, Inc., quarried only flagging sandstone. Crushed sandstone was marketed by Latrobe Construction Co., Longbridge Quarry, Latrobe; and Eidemiller Enterprises, Inc., Greensburg.

Kingston Brick Co. operated an open-pit mine near Latrobe to produce plastic fire clay and miscellaneous clay for use at the company local brick plant and also for sale on the open market. Westmoreland Clay Products Co. operated an open-pit mine near Youngwood to produce miscellaneous clay for use in manufacturing heavy clay products at its South Greensburg plant.

Leading producers of bituminous coal in 1954 from underground and strip mines were Allegheny Pittsburgh Coal Co., Bowman Coal Co., Delmont Fuel Co., Jamison Coal & Coke Co., Marco Coal Co., Inc., Pine Run Coal Co., Pittsburgh Coal Co., Republic Steel Corp., Seanor Mining Co., and Westmoreland Coal Co.

Wyoming.—Sand and gravel pits were operated by Wyoming Sand & Stone Co. and East Falls Sand & Gravel Co., both in Falls Township. A small quantity of gravel for paving use was also produced in Wyoming County by the Pennsylvania Department of Highways.

York.—Limestone was quarried and crushed by Thomasville Stone & Lime Co. and Lincoln Stone, Inc., Thomasville; The J. E. Baker Co., Botts; and National Gypsum Co., Eli Z. Zinn, Inc., White Pig-

ment Corp., York Stone & Supply Co., and Standard Concrete Products Co., Inc., all of York.

Medusa Portland Cement Co. produced clay and white cement at its York plant.

General Mining Associates operated an open-pit mine near Glenville for producing mica for use in paints, rubber, welding rods, and insulation.

Neuman Sand & Supply Co. mined and processed bank-run sand, principally for building and paving use. Funkhouser Co. operated its slate quarry near Delta. The slate was ground and sold as flour and granules.

Glen-Gery Shale Brick Co. produced miscellaneous clay from an open pit for use in manufacturing of heavy clay products at its York plant.

The York plant of National Gypsum Co. was active in 1954, producing both quicklime and hydrated lime. The lime was produced for various uses, principally the following: Fertilizers, insecticides, fungicides and disinfectants; water purification and softening; and paper.

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